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PATENT**REMARKS**

Favorable reconsideration of this application is respectfully requested in view of the above amendments and following remarks. Claim 1 is amended to address formal issues, and claims 7-9 are amended for consistency with the revision of claim 1. No new matter has been added. Claims 1, 6-9, 11-14, and 24-26 are pending.

Claim Objections

Claim 1 is objected to because the term "hydroxycholate" is unclear. Claims 1 and 7-9 have been amended to revise this term to "cholate" and address the Examiner's concern. Withdrawal of the objection is respectfully requested.

Claim Rejection- 35 U.S.C. 112

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, for being indefinite. As discussed in the above objection, Applicants respectfully submit that the claims are definite as the term "hydroxycholate" has been amended to the term "cholate." Withdrawal of the rejection is respectfully requested.

Claim Rejection- 35 U.S.C. 103

Claims 1, 6-9, 11-14, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimomura et al. (previously cited) in view of Sode (previously cited) and further in view of Amersham catalog 1999, pages 520, 523, and 527 (hereafter Amersham). Applicants respectfully traverse this rejection and request reconsideration for at least the following reasons.

Claim 1 is directed to a method for purifying a target protein from a protein solution containing the target protein by using liquid chromatography. The target protein is glucose dehydrogenase derived from a microorganism belonging to the genus Burkholderia and has α , β , γ subunits. The liquid chromatography comprises a first step of introducing the protein solution into a column filled with a packing agent. The packing agent holds the target protein, and is an ion-exchange resin containing a quaternary ammonium group as an ion-exchange group. In a second step, the target protein is eluted using an eluent containing cholate.

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The references cited do not disclose or suggest the features of claim 1. The deficiencies of Shimomura et al. and Sode are well documented and of record. That is, Shimomura et al. fails to disclose or suggest the claimed specific glucose dehydrogenase nor the specific ion-exchange resin, namely an ion-exchange resin containing a quaternary ammonium group as an ion-exchange group. Sode discusses glucose dehydrogenase from the genus *Burkholderia* having α , β , and γ subunits. However, Sode does not disclose or suggest elution using a cholate and does not teach or suggest chromatography using an ion-exchange resin containing a quaternary ammonium group as an ion-exchange group, both of which are acknowledged in the Office Action.

Applicants acknowledge that Amersham discloses use of Q sepharose fast flow column, having an ion exchange resin containing a quaternary ammonium group as an ion-exchange group. However, Applicants respectfully submit that claim 1 does not follow from the references cited, because there is no reasonable suggestion or motivation for one of skill in the art to combine the references. It is Applicants who have found a method, through their extensive modeling and yield studies (see Examples in Applicants' original disclosure) that by particularly using the ion exchange resin containing a quaternary ammonium group with the eluent containing a cholate, as claimed, that excellent purification of the target protein glucose dehydrogenase from *Burkholderia* can be obtained. While the references individually mention the eluent and packing agent employed in Applicants' method claim 1, the rejection provides no reasonable suggestion that one of skill in the art would select, or have any desirability to select, the particular eluent and packing agent for purifying the particular target protein as claimed. Further, even if the references could be combined, which Applicants do not concede, the combination of references provide no suggestion that there would be any expectation of success, as found by Applicants when using a ion exchange resin containing a quaternary ammonium group as the packing agent of the column and using an eluent containing cholate, in the purification of glucose dehydrogenase from *Burkholderia*. Consequently, claim 1 does not follow from the references cited and is patentable.

Moreover, claim 7 recites that the particular cholate comprises sodium cholate. Applicants have also found through their studies that sodium cholate is particularly useful in the purification method. Applicants respectfully submit that using an eluent containing

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sodium cholate is not taught by the prior art and that claim 7 also is non-obvious for this reason as well as the reasons discussed above with respect to claim 1.

For at least the foregoing reasons, Applicants respectfully submit that claim 1 and its dependents are patentable over the references cited and respectfully request favorable reconsideration and withdrawal of the rejection.

Lastly, Applicants again respectfully note that the Form 1449 of the Information Disclosure Statement filed August 16, 2007 does not confirm that all of the references listed in the Form 1449 were considered. Particularly, the references listed in the 'Other Documents' section were not initialed by the Examiner in the Office Action October 31, 2007. Applicants respectfully request that the Form 1449 be completely initialed and returned to Applicants' representative to confirm that the references were considered.

Applicants also appreciate the Examiner's acknowledgment of Applicants' claim for priority in the previous Office Action dated June 13, 2006. Applicants again note, however, that the claim for priority was acknowledged in the body of the June 13, 2006 Office Action (in the Detailed Action portion of the paper), rather than on the Office Action Summary (PTOL-326), as the proper boxes were left unchecked in this form. Applicants respectfully request that the acknowledgement of priority be indicated on the next communication summary page.

In view of the above amendments and remarks, Applicants believe that the pending claims are in a condition for allowance. Favorable consideration in the form of a Notice of Allowance is respectfully solicited. If any questions arise regarding this communication, the Examiner is invited to contact Applicants' representative listed below.



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Respectfully submitted,

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